



Time Access & Automotive Systems

Tel: 011 326 4146 - 082 375 3280
www.timeandautomotive.co.za

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TAS



Tel: 011 326 4146

Fax: 011 781 4392

Cell: 082 375 3280

P.O Box 6749

Cresta 2118

Website: www.timeandautomotive.co.za

E-mail: adriang@lantic.net

Product Range:

Biometrics / Time & Attendance / Access Control

- **Facial Recognition Systems**
- **Handscan Time & Attendance, Access Control or Both**
- **Fingerprint Time & Attendance, Access Control or Both**
- **Proximity card & Computerized Time & Attendance, Access Control or Both**
- **Time Recorders and Clocking Machines with Battery Backup and red print to Highlight Late comers with Siren attachment.**
- **Timers, Sirens, Clock Cards, Card Racks, Ribbons and Accessories.**
- **Night Watchman Manuals & Computerized Clocks**
- **Battery Powered Systems for all Sites without power Handscan, Fingerprint, Proximity, Tag Computerized Systems and Battery Powered Clocking Machine**
- **Computer Sales, Repairs & Upgrades**
- **CCTV Cameras & Accessories (Facial Recognition)**
- **Cabled & Wireless Cameras**
- **Gate Motors all makes**
- **Intercom Systems**
- **Beams Inside and Outside**
- **Electric Fences**
- **Sales and Services for all the Products above**

**KINDLY CONTACT THE ABOVE FOR
PROFESSIONAL SERVICE**

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Automotive Products & Instruments

VDO Parts & Accessories

- VDO Car Radiator Fans & Air-con Fans
- VDO Fuel Pumps & Water Pumps & Thermostats
- Low Water Probes & Fuel Level Probes
- Windscreen Washer Kits & Wiper Blades

Winches

- Warn Range of Winches

Engine Monitoring System

- Engine Monitoring Systems with shut down facilities
- Speed, Rev & Idle Limiters & Turbo Timers.....
- Tachographs Monitoring for Driver's Performance

Engine Parts & Accessories

- Warning Triangle
- Caps & Cooling Systems, Switches, Carburetor Kits, Ignitions, Clutch Kits, Glow Plugs, Electronic Cat, Ignition Leads Set, Timing Belts and Air-brake Components
- Lurton Range of Measuring Instruments
- Thermometers, Light Meters, Humidity Meters, pressure meters & all other types of meter ranges
- VDO Radio & Accessories & Steering & Suspension Components

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Automotive Products & Instruments

Cables

- Speedo Cables, Accelerator Cables, Chock Cables, Rev Counter Cables, Push & Pull Cables, Clutch Cables & all other types of cables

VDO Gauges & Instruments

- Speedo's, Rev Counters, Pressure gauges, Volt Meter, Temperature gauges, Hour-meters, Amp Meters Pyrometers

Speedo & Cluster Instruments Repairs

- Colour coding Done on Speedo's, Rev Counters and Gauges, counters, Handheld Tachometers & Hub-odometers

Marine

- VDO Temperature, Pressures senders, Switches, Speed Sensors & all types of Marine Gauges & Accessories.
- Automotive Marine & Industrial Gauges, all ranges available
- Automotive, Marine & Industrial Gauges, all ranges available

Colour Coding

- All colour coding on speedo's and gauges

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Auto Electrical Products

Lights & Globes

- Beacons, buzzers, globes, fuses, lamps, light bars, lights, light sockets, power pack, torches, relays, switches, pilot lights, sealed beams, plugs & sockets, strobe lights & backup alarms

Accessories

- Cables, clamps, connectors housing, solder, springs, tape, lubricant spray, sleeving, ring kits & anti freeze, horns, hooters, circuit breakers, flasher unit terminals, testers & chevrons, cooler box, inverters, junction boxes, reflectors, tow truck tail board

Ignition Systems

- New caps, rotors, ignition coils, electronic modules/pick ups, distributors cap & ID
- Contacts sets, condensers, condenser wire lengths, rotors, radio suppressors, resistors & vacuum control

Alternators, Solenoid Starters

- Alternators, armatures, bearings, oil seals, brush holders, bushes, diodes & rectifiers, drivers, end brackets, fan, field coils, hardware, alternator starters, pulleys, reduction & repairs kit listing, slip rings, solenoids, solenoid repairs parts, starters, starter to drive I.D, stator & voltage regulators

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K 30 Fingerprint Reader

K30 is a 2.8-inch TFT screen Time Attendance Terminal. TCP/IP and USB Host make data management extremely easy. Most importantly, the built-in backup battery can eliminate the trouble of power failure. With elegant appearance and reliable quality, you can get the best from it.

Specifications

Fingerprint Capacity : 1000 (1:N)
ID Card Capacity : 1,000 (Optional)
Record Capacity : 80,000
Display : 2.8-inch Screen
Communication : TCP/IP, USB
Standard Functions : Work Code, Built-in Battery
Optional Functions : Mifare Card
Software : ZKTime. Net 3.0
Power Supply : DC12V 2A
Operating Humidity : 20%-80%
Dimension : 184 x 136 x 38mm (Length x Width x Thickness)



Multi - Bio 700

- ♦ Less than 1 second user recognition
- ♦ Stores 400 facial templates, 2000 fingerprint templates
10 000 cards and 100,000 transactions
- ♦ 3 inch touch screen
- ♦ Reads Face and/or Fingerprint and/or ID card
- ♦ Support 50 time zones, 99 groups and
10unlock combinations
- ♦ Integrated 125kHz RFID proximity reader
- ♦ Built-in Serial and Ethernet ports
- ♦ Built-in Wiegand input/output ports for connection to
third
party control panels
- ♦ Built-in USB port allows for manual data transfer
- ♦ Audio - Visual indications for acceptance and rejection
of valid/ invalid users ♦ Tamper switch

Specifications

Face Capacity: 400 templates
Fingerprint Capacity: 2,000 templates
Transaction Capacity: 100,000 transactions
RFID Card Capacity: 10,000 cards
Camera: High Resolution Infra-red Camera
Sensor: ZK Optical Sensor
Algorithm Version: ZK Face V7.0 & ZK Finger v10.0
Built-in Card Reader: 125kHz RFID proximity reader
Communication: RS485, TCP/IP, USB-host
Wiegand Ports: Input and Output any bits
Access Control interfaces: 3rd party electric lock, door sensor,
exit button, open
door alarm
Access Control functions: 50 time zones, 99 access control
groups, 10 unlock
combinations
Power Supply: 12V DC 3A
Length x Width x Thickness)



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MA 300 Access Control

MA300, one of the innovative biometric fingerprint readers for access control applications. Offering unparalleled performances by adopting an advanced ZK fingerprint algorithm for reliability, precision and excellent matching speed.

It is metallic casing and IP65 rated which enables it to be resistant from water, dust and other outside damages.

MA300 offers the flexibility to be installed standalone or with any third party panels that support 26-bit wiegand. User can be enrolled by the administrator card when the device works in standalone mode. TCP/IP and RS485 are available, so that the device can be connected easily and conveniently.

Metallic Casing

Specifications

Fingerprint Capacity 1,500 templates

ID Card Capacity 10,000

Transaction Capacity 100,000

ZKFinger VX10.0

Communication RS485, TCP/IP, USB-host

Access Control Interfaces for 3rd party electric lock, door sensor, exit button, alarm Wiegand Signal Input & Output

Standard Access Control Function Time Zone, Group, Anti-passback, external USB keypad Optional Functions Mifare,

HID Display Power Supply 12V DC Protection Grade IP65

Dimension(WxHxD)mm 73x148x34.5



F 18 Access Control

F18 is an innovative biometric fingerprint reader for access control application.

With high-performance firmware functions and compact design, it has become one of ZKTeco's most popular devices. It is applied with ZKTeco's latest firm-

ware with user-friendly UI and flexible user privilege settings for multi-level management. The new hardware platform uses ZMM210 core-board with

1.2Ghz CPU. With optimization of both hardware platform and firmware, the

new f18 is able to verify fingerprints with even higher efficiency. The device of-

fers flexibility of both standalone installation and installation with any third-party access control panels which support standard Wiegand signal. TCP/IP and

RS485 are also available which enable F18 to be applied in different network.

Specifications

Fingerprint Capacity 3000 Templates

Card Capacity 5,000 (Optional)

Transaction Capacity 30,000 Transactions Sensor

Communication RS232/485, TCP/IP, USB-host

Access Control Interface 3rd Party Electric Lock, Door Sensor, Exit Button, Alarm, Doorbell Wiegand Signal Input and Output

Display TFT LCD Color Screen Interface Styles

Common, Matrix and Magic styles Standard Function Web server, Anti-

passback Optional Function ID Card, Mifare Card Power Supply 12V DC, 3A

73x148x34.5



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Amano EX 3500N

Fully electronic time recorder, lockable, strong synthetic covering, easy to use and program, compact construction.

Main Features:

- Fully electronic time recorder with large, clear analogue display
- Ergonomically shaped slot for time cards with anti-dust lid
- Silent time adjustment
- Quartz clock with an accuracy of ± 3 sec/week
- Quiet matrix printer (9 needles)
- Automatic time card feeding capability
- Maintenance of program data during power failure
- Calendar with automatic date adjustment
- Automatic adjustment for daylight saving time
- Two-colour printing black/red
- Automatic Column Shift
- Relay for Ringing Signal
- Free programmable weekly programs
- Programmable day switch
- 6 Lighted keys for IN/OUT pre-selection
- Can print up to 6 columns
- Regular minute, 1/100, 1/10 or 1/20 hour display
- Amano time card size 86mm
- Column switch through keys
- Detection for both sides of the card
- Pre-programmed basic functions
- Delivery including black/red ribbon
- Wall mounting or installation on table



Mindman AB 200

Features:

- Large display, small and compact body. Convenient for table tops or easy wall mounting fits in any narrow space.
- Accurate perpetual calendar, automatic adjustment at the end of the month and year
- Fully automatic, across/up/down card printing
- Auto-shift IN/OUT printing position, auto-detect the correct side of card
- Program can be set by any day of week
- Easy to use 2-colour cartridge ribbon
- Built in memory chime, with external output
- Payroll cut off date setting can be changed at option, monthly, semi-monthly, weekly & bio-weekly
- Programmable multilingual printing capability
- Reliable micro-processor control
- Lithium battery protects the clock, calendar and program data for 3 years
- Backup battery keeps working in case of power failure



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Amano PIX 200

Electronic Time Recorder/Stamp

All in one electronic time recorder, time/date stamp and numbering machine, uses little desk space, quiet operation, multiple print formats and comments

Main Features:

Economical time recorder/stamp designed for modern society

Illuminated print window

Password prevents tampering with settings

Ink capacity gauge

Easy to replace ribbon cartridge

Wall or desk mount

Programmable print size

Dot matrix printing

Quartz oscillation clock with an accuracy of ± 3 sec/week

Automatic daylight saving time adjustment

Clock and programming data kept for 3 years without AC power

31 selectable pre set print styles: prints year, months, day, date, hour (AM/PM or 0-23), minutes (regular, 10th, 1/100A, 1/100B(5/100)) seconds, 8-digit number and comments in various order

13 selectable comments in 6 languages

Programmable customized comment imprint (up to 3 lines)

Prints up to 8 consecutive numbers with automatic reset function at a specified programmed time

Power supply: 230VAC 50Hz

Temperature: -10°C to $+45^{\circ}\text{C}$ (14F-113F)

Humidity: 10% to 90% (no condensation)

Dimensions: WxHxD: 159 x 163 x 171 mm

Weight: 2.2 kg (4.85 lbs)(not including optional battery, AC ad-



Mindman SP 600

Main Features:

All functions are quickly and easily customized to meet your exact business requirements

Built-in battery backup for time, date and memory auto reset after power failure, never needing to be reset

Automatic month end and leap year adjustment

Left or right hand margin printing

Large illuminated print window for accurate alignment of document

Printing options include manual, automatic, semi automatic and combination

Automatic hour adjustment for summer and winter time change

1 to 8 digit numbering: Up to nine repeats

Selectable printing: 29 present formats such as "19 jan 2014 11:00"

Customizable printing: Up to three separate lines

12 or 24 hour print format

Regular minute or 1/10, 1/100 or 5/100 of an hour 13 pre set comments such as Filed, Set, Paid

Prints in English, German, Spanish, French, Italian or Portuguese

Password for program protection '*' mark for irregular printing, programmable by each day of the week

Wall or table-top mounting

Power supply: 220-240VAC 50/60Hz

Dimensions: WxHxD: 156 x 187 x 174 mm

Weight: 2.2 kg



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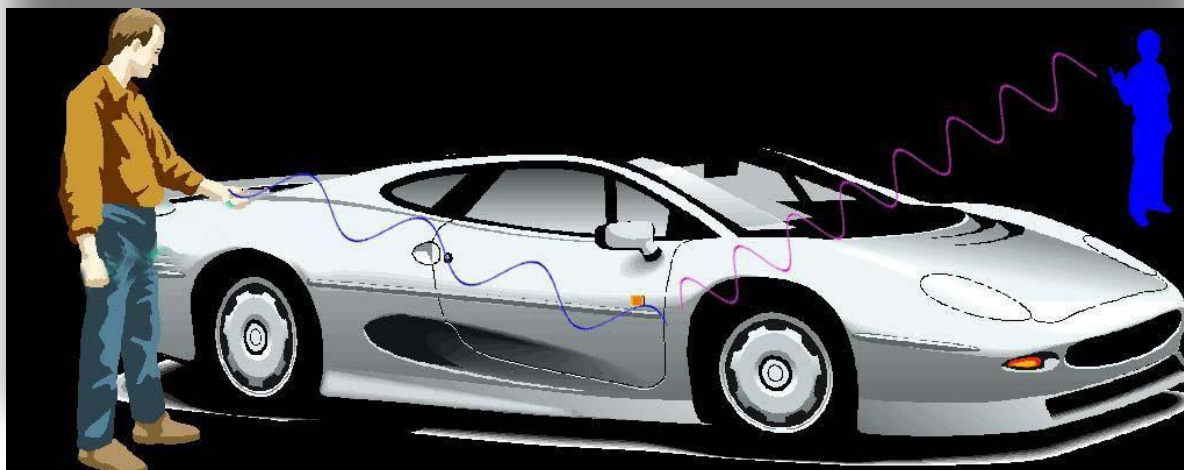


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How the CarGuard works:



There has been a sharp increase in motor theft and theft of valuables from vehicles due to **remote jamming**. This recent trend of jamming the remote locking of cars is very common. When a person leaves their car, criminals activate their jammers which prevent the person's remote signal from reaching their car and locking the doors. As the individual walks away, thinking their car is locked, the thieves have easy access to the vehicle to steal laptops, backpacks, wallets, sunglasses and luggage.



The **CarGuard** was designed to detect the jamming signal of thieves and to raise an alarm. It is ideal for large shopping centres and office parking areas as it is fully portable and can be used by security personnel as they patrol the car parks. It has a 100m detection range. The device also has a LCD graphics display and it has both a vibration and beeper alert to warn security personnel of any potential remote jamming.

Please note that our devices do not prevent the jamming signal – they just detect it and set off an alarm to warn you!

Benefits:

- Security personnel are immediately alerted to potential car jamming.
- **CarGuard** is fully portable and has a 100m range.
- The unit has a real time clock and has the ability to record and display a 200 event history.

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How the MallGuard works:

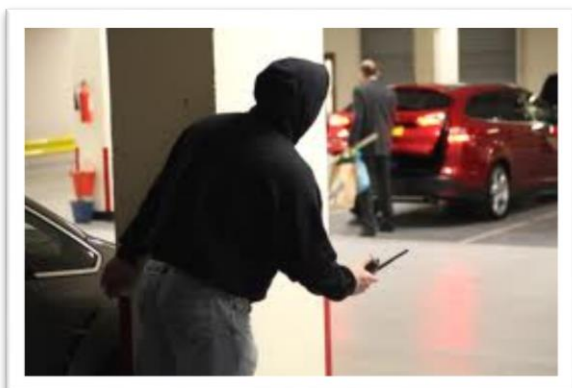


There has been a sharp increase in motor theft and theft of valuables from vehicles due to remote jamming. This recent trend of jamming the remote locking of cars is very common. When a person leaves their car, criminals activate their jammers which prevent the person's remote signal from reaching their car and locking the doors. As the individual walks away, thinking their car is locked, the thieves have easy access to the vehicle to steal laptops, backpacks, wallets, sunglasses and luggage.



The *MallGuard* is perfect for petrol filling stations and small shopping centre car parks. It is able to detect the thieves' jamming signal and set off an alarm. It is a fixed unit that can be attached to either a wall or pole. The *MallGuard* has a loud siren and a red flashing strobe light to alert security personnel of potential car jamming and subsequent theft. Detection range will depend on the jamming device being used but on average the units detect up to 200 m. **Please note that**

our devices do not prevent the jamming signal – they just detect it and set off an alarm to warn you!



Shopping centres that have installed these units have reported a decreased rate in theft via remote jamming

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Gauges	Ammeter	1
	Clock	1
	Fuel, Lever, Tubular	1-2
	Hourmeters	3
	Pressure	4-5
	Speedometers	9
	Tachometers	12
	Tachourmeters	12
	Temperature	13-14
	Temp. Exhaust/Pyrometer	14
	Turbo Charger	6
	Vacuum	6
	Voltmeter	6
Oil Pressure Senders & Switches		7-8
Speed Sensors		9-11
Temp. Senders & Switches		16-17

AMMETER - With Internal Shunt

Suitable for most engines. **Monitors Charge and battery condition.**
Voltage independent - suitable for 12 & 24V
Ammeters with internal shunt are easily identified by the heavy duty threaded terminals. Heavy duty wire must be used for wiring.
Illumination globe holder included.
For 24V application use globe 999-065-002
For 12V application use globe 999-065-001

Part no.	Range	Ø
190-037-001C	30-0-30AMP	52mm
190-037-002C	60-0-60AMP	52mm
190-037-003C	100-0-100AMP	52mm

CLOCK - Quartz

The VDO Quartz Clock offers accurate timing to within ± 1 second per day. The crystallographic properties of quartz ensure that the electric current is precisely regulated for accurate timing.

ELECTRIC CLOCKS

Part no.	Voltage	Ø
370-214-031-001G	12	52mm
370-214-031-003G	24	52mm

FUEL GAUGES - Lever

Suitable for use with petrol and diesel fuel.
Illumination 12V and 24V included.

FUEL GAUGES 10-180 ohms

Part no.	Range	Ø	Voltage
301-030-001C	0-1/1	52mm	12
301-040-001C	0-1/1	52mm	24

For tank units with 10-180 ohms resistance.
Without ISO symbol.

SENDER - Adjustable Float Arm

Part no.	Specifications	Length
220-003	0-1/1	150mm-600mm
	Empty 10 ohm	Full 180 ohm

SENDER - Plastic Adjustable Includes Warning Contact

Part no.	Specifications	Length
A2CS9510162	3-180ohm	145-400mm

FUEL GAUGES - Tubular

FUEL GAUGES - Tubular

Part no.	Range	Ø	Voltage
301-030-002C	0-1/1	52mm	12
301-040-002C	0-1/1	52mm	24

With ISO symbol for fuel level

For tubular tank units, adjustable resistance range

Full 3 ohm Empty 9 ohm

TUBULAR TYPE SENDERS (PCD* Pitch Circle Diameter)

Part no.	PCD*	Cut-Out Dia.	Voltage	Length
224-082-008-008R	54mm	42mm	12/24	189,5mm
224-011-000-027G	54mm	42mm	12/24	270,0mm
224-011-000-037X	54mm	42mm	12/24	370,0mm
224-817-008-004R	54mm	42mm with warning contact		380,0mm
224-011-000-039X	54mm	42mm	12/24	390,0mm
224-082-005-117R	54mm	42mm	12/24	498,5mm
224-082-005-012R	54mm	42mm	12/24	555,0mm
224-082-005-129R	54mm	42mm	12/24	665,0mm
224-817-008-011C	54mm	42mm with warning contact		737,5mm
224-082-005-161R	54mm	42mm	12/24	914,0mm

TUBULAR TYPE SENDERS (Heavy Duty)

Part no.	PCD*	Cut-Out Dia.	Voltage	Length
X10-224-009-039	80mm	57mm	12/24	596,0mm
X10-224-009-029	80mm	57mm	12/24	741,0mm
X10-224-009-040	80mm	57mm	12/24	1086,0mm
X10-224-009-072	80mm	57mm	12/24	1387,0mm

TUBULAR TYPE SENDERS (Insulated Versions)

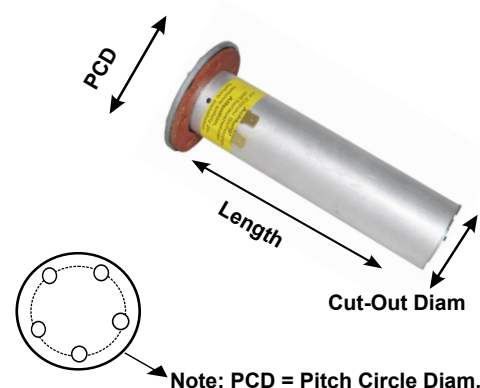
Part no.	PCD*	Cut-Out Dia.	Voltage	Length
X10-224-021-001	80mm	57mm	12/24	536,0mm
X10-224-021-006	80mm	57mm	12/24	846,0mm
X10-224-021-005	80mm	57mm	12/24	1045,0mm

Please Note: All 54mm PCD have an Aluminium body

Please Note: All 80mm PCD have a Steel Body

ACCESSORIES

Part no.	Description	PCD*
2-250-234	Gasket, cork	54mm
2-251-006	Gasket, cork	80mm
2-251-016	Gasket, rubber	80mm
1403141	Flange only	
1403145	Flange & gasket	54mm



HOURLMETER - Electronic

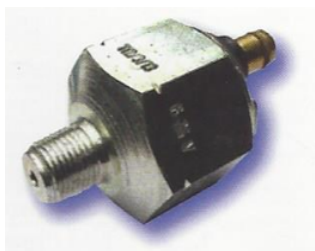
Suitable for all vehicles and machines
Available with 360° minute hand sweep or as counters only

With 360° Sweep Hand, Black Bezel

Part no.	Range	Ø	Voltage
331-810-012-002G	0-99999.9hrs	52mm	12/24

No Minute Hand, Black Bezel

Part no.	Range	Ø	Voltage
331-810-012-001X	0-99999.9hrs	52mm	12/24



ACCESSORIES

Part no.	Description	Thread
230-112-001-002C	Pressure switch 70kPa - 5 watt - N/O	18" - 27NPTF 6-24V

HOURLMETER -Vibration Type

For control of motors and engines as well as for recording the operating time of machinery not connected to an electric power supply but generating vibrations in service.

Part no.	Description
D611008	52mm
D611010	60mm
D611012	52mm with anti-vibration mounting kit
D761120	60mm bracket
D761130	72mm bracket
D761143	Vibration ring assembly

- Installation is simple as no source of current is required.
- Vibration-proof clockwork operating with high accuracy.
- Metering capacity 99.999 hours with minute read-out.
- Suitable for installation in openings of different diameters with mask or damper ring.
- Waterproof and tropicalised.
- Fit for service in ambient temperatures from -15°C to +60°C.
- Designed for flush and surface mounting.

PRESSURE GAUGE - Electric

Suitable for all vehicles and machines.

Illumination 12V or 24V included. **Note:** Not recommended for petrol or water.

PRESSURE GAUGES, Engine Oil Pressure 500kPa

Part no.	Range	Ø	Voltage
350-030-016C	0-500kPa	52mm	12
350-040-016C	0-500kPa	52mm	24

With ISO symbol.

500kPa = 72.5 PSI

SENDER only 500kPa

Part no.	Range	Thread	Voltage
360-081-029-004C	500kPa	1/8" - 27NPTF	12/24

SENDER/SWITCH Combination

Part no.	Range	Thread	Switch Point
360-081-030-049C	500kPa	1/8" - 27NPTF	50kPa

Refer to your engine manufacturers manual for correct oil pressure.

Note: 500kPa = 72.5PSI. Additional senders are listed on page 7.

PRESSURE GAUGES, Engine Oil Pressure 1000kPa

Part no.	Range	Ø	Voltage
350-030-017C	0-1000kPa	52mm	12
350-040-017C	0-1000kPa	52mm	24

With ISO symbol.

1000kPa = 145 PSI

SENDER Only 1000kPa

Part no.	Range	Thread	Voltage
360-081-029-012C	1000kPa	1/8" - 27NPTF	12/24

SENDER/SWITCH Combination

Part no.	Range	Thread	Switch Point
360-081-030-052C	1000kPa	1/8" - 27NPTF	50kPa

Refer to your engine manufacturers manual for correct oil pressure.

Note: 1000kPa = 145PSI. Additional senders are listed on page 7.

PRESSURE GAUGES, Transmission Oil Pressure

Part no.	Range	Ø	Voltage
350-030-005C	0-25 bar	52mm	12
350-040-005G	0-25 bar	52mm	24

With ISO symbol.

25 Bar = 2500kPa = 360PSI

SENDER Only 2500kPa

Part no.	Range	Thread	Voltage
360-081-038-003C	0-25 bar 360PSI	1/8" - 27NPTF	12/24



PRESSURE GAUGES - Mechanical

Suitable for most vehicles and machines. Can be used on most non-aggressive gases and liquids. Supplied with nut and cone for 3/16" PVC tubing. Globe Holder not included.

For 24V application use globe part no. **999-065-002**

For 12V application use globe part no. **999-065-001**

Globe Holder part no. **999-067-001**

Part no.	Range	Ø
150-035-019G	0-700kPa	52mm
150-035-020G	0-1000kPa	52mm
150-035-022G	0-2500kPa	52mm

TURBO BOOST GAUGE - Mechanical

Suitable for all vehicles.

Supplied with nut and cone for 3/16" PVC tubing.

Illumination 12V included.

Part no.	Range	Ø
150-015-001K	0 to +3 bar	52mm

ACCESSORIES

Part no.	Description	Length
150-005	Pressure pipe kit	2 Meters
150-006	Pressure pipe kit	5 Meters
150-007	Pressure pipe kit	6 Meters

TURBO CHARGER GAUGE- Mechanical

Suitable for all vehicles.
Illumination 12V included.

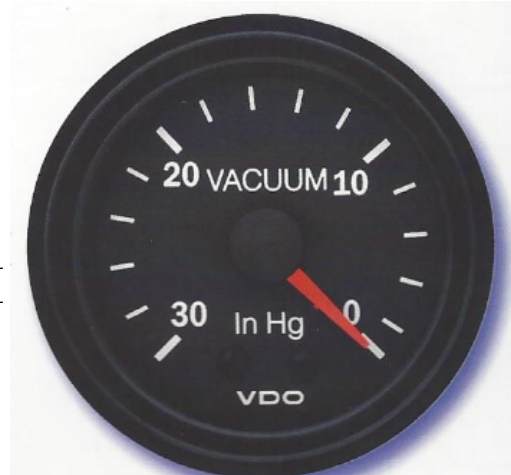
Part no.	Range	Ø
150-035-001G	-1-0 to +1,5 bar	52mm



VACUUM GAUGE - Mechanical

Suitable for most vehicles.
Supplied with nuts and cones for 3/16" tubing.
Illumination 12V included.

Part no.	Range	Ø
150-077-005	-30-0" Hg	52mm



VOLTMETER

Suitable all engines and machines.
Monitors charge and battery condition.
Illumination 12V or 24V included.

Part no.	Range	Voltage	Ø
332-030-001C	8-16V	12	52mm
332-040-001C	18-32V	24	52mm



OIL PRESSURE SENDERS

WITHOUT WARNING CONTACT - COMMON GROUND

Part no.	Range	Thread	Type
360-081-029-004C	500kPa	1/8"x27NPTF	(A)
360-081-029-012C	1000kPa	1/8"x27NPTF	(A)

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

Rated Voltage: 6V to 24V

Operating Temperature: -25°C to +100°C

(up to +120°C for 1 hour max. at threaded connector)

Resistance range: 10 Ω to 184 Ω

OIL PRESSURE SENDERS - With Switch

WITH WARNING CONTACT - COMMON GROUND

Part no.	Range	Switch Point	Thread	Type
360-081-030-049C	500kPa	40kPa	1/8"x27NPTF	(B)
360-081-030-052C	1000kPa	50kPa	1/8"x27NPTF	(B)
360-081-030-025C	500kPa	40kPa	M18x1.5	(C)
360-081-030-032C	1000kPa	50kPa	M14x1.5	(B)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

• Rated Voltage: 6V to 24V

• Operating Temperature: -25°C to +100°C

(up to +120°C for 1 hour max. at threaded connector)

• Resistance range: 10 Ω to 184 Ω

• Switching capacity of warning contact: 5W max. non-inductive

OIL PRESSURE SENDERS - Single Station

WITHOUT WARNING CONTACT - INSULATED RETURN

Part no.	Range	Thread	Type
360-081-032-001C	500kPa	1/8"x27NPTF	(B)
360-081-032-014C	1000kPa	1/8"x27NPTF	(B)
360-081-032-025C	200kPa	1/8"x27NPTF	(C)
360-081-038-002C	2500kPa	3/8"x18NPTF	(F)
360-081-038-003C	2500kPa	1/8"x27NPTF	(E)

Note: 200kPa = 29 PSI, 500kPa = 72.5k PSI, 1000kPa = 145 PSI
2500kPa = 362.5 PSI

• Rated Voltage: 6V to 24V

• Operating Temperature: -25°C to +100°C

(up to +120°C for 1 hour max. at threaded connector)

• Resistance range: 10 Ω to 184 Ω

• Overpressure safety: 30 bar or 50 bar max.

(short period only for 2 seconds)

OIL PRESSURE SENDERS - With Switch

WITH WARNING CONTACT - INSULATED RETURN

Part no.	Range	Switch Point	Thread	Type
360-081-039-002C	500kPa	80kPa	1/8"x27NPTF	(G)
360-081-039-003C	1000kPa	80kPa	1/8"x27NPTF	(G)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI

• Rated Voltage: 6V to 24V

• Operating Temperature: -25°C to +100°C

(up to +120°C for 1 hour max. at threaded connector)

• Resistance range: 10 Ω to 184 Ω

• Overpressure safety: 30bar or 50 bar max.

(short period only of 2 seconds)

• Switching capacity of warning contact: 5W max. non-inductive

OIL PRESSURE SENDERS- Dual Station

WITHOUT WARNING CONTACT - INSULATED RETURN

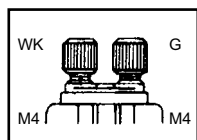
Part no.	Range	Thread	Type
362-081-001-001K	500kPa	1/8"x27NPTF	(F)
362-081-001-002K	1000kPa	1/8"x27NPTF	(F)
362-081-002-001K	2500kPa	1/8"x27NPTF	(F)

Note: 500kPa = 72.5 PSI, 1000kPa = 145 PSI, 2500kPa = 362.5 PSI

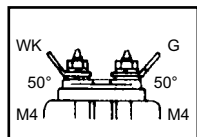
• Rated Voltage: 6V to 24V



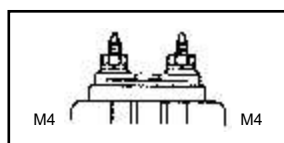
(A)



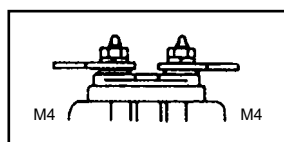
(B)



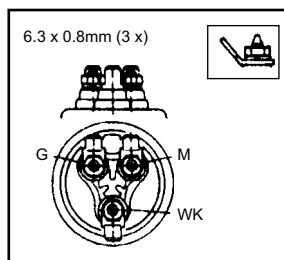
(C)



(E)



(F)



(G)

HEAVY DUTY PRESSURE SWITCH

NON-INSULATED

Part no.	Switch Point	Thread	Contacts	Type
230-112-003-013C	70kPa	1/8"x27NPTF	Close as pressure falls	(A)
230-112-003-012C	600kPa	1/8"x27NPTF	Close as pressure falls	(A)
230-112-001-002C	70kPa	1/8"x27NPTF	Close as pressure rises	(A)
230-112-001-001C	100kPa	M10x1	Close as pressure rises	(A)

Note: 70kPa = 10.15 PSI, 100kPa = 14.50 PSI, 600kPa = 87 PSI

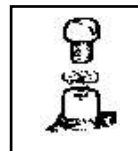
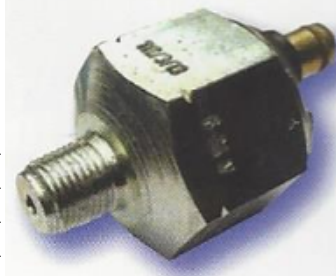
- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to 120°C
(up to 140°C for 1 hour max. at threaded connector)

INSULATED

Part no.	Switch Point	Thread	Contacts	Type
230-112-005-006C	50kPa	M10x1	Close as pressure falls	(E)
230-112-007-005C	30kPa	M14x1.5	Open as pressure rises	(G)
230-112-005-011C	150kPa	M10x1	Close as pressure falls	(F)
230-112-002-001C	50kPa	1/8"x27NPTF	Close as pressure rises	(E)

Note: 30kPa = 4.35 PSI, 50kPa = 7.25 PSI, 150kPa = 21.75 PSI

- Rated Voltage: 6V to 24V
- Operating Temperature: -25°C to 120°C
(up to 140°C for 1 hour max. at threaded connector)



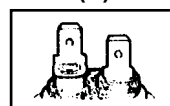
(A)



(E)



(F)



(E)

ADJUSTABLE PRESSURE SWITCH

INSULATED

Part no.	Terminal	Adjustable Range	Contacts
105-018	screw	10-100kPa	Close as pressure rises
105-020	blade	10-100kPa	Close as pressure rises
105-021	blade	100-1000kPa	Close as pressure rises
105-022	blade	1000-2000kPa	Close as pressure rises
105-023	blade	2000-5000kPa	Close as pressure rises
105-024	blade	10-100kPa	Close as pressure falls
105-025	blade	100-1000kPa	Close as pressure falls
105-026	blade	1000-2000kPa	Close as pressure falls
105-027	blade	2000-5000kPa	Close as pressure falls

Over Pressure Rating up to 30000kPa

Max Voltage 42V-DC

Threads: all M10x1 T





SPEEDOMETERS

Floodlit illumination. 12V globe included.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip distance 99,999.9 resettable.

Signal source Hall effect, inductive or blocking oscillator sender units.

For 24V application use globe 999-065-002 (2 required).

Note: 140mm speedometer impulse Radio programmable (1000-60000 pulses/Km (via software).

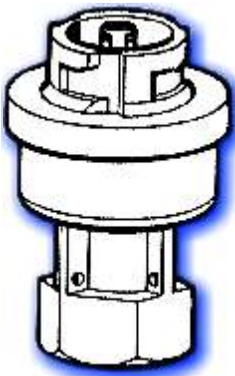
For matching sender units refer to page/s 12-14.

Part no.	Range	Ø	Voltage
437-035-001C	0- 60km/h	80mm	12/24
437-035-012C	0- 80km/h	80mm	12/24
437-035-002G	0-120km/h	80mm	12/24
437-035-003C	0-200km/h	80mm	12/24
437-055-001G	0-60km/h	100mm	12/24
437-055-002G	0-120km/h	100mm	12/24
437-025-002G	0-125km/h	140mm	24

Note:

8 way socket connector part no: **Z863103**

8 x terminal part no: **Z863016**



SPEEDOMETERS - Hall Effect

Electrical connection: 3-pole, insulated return

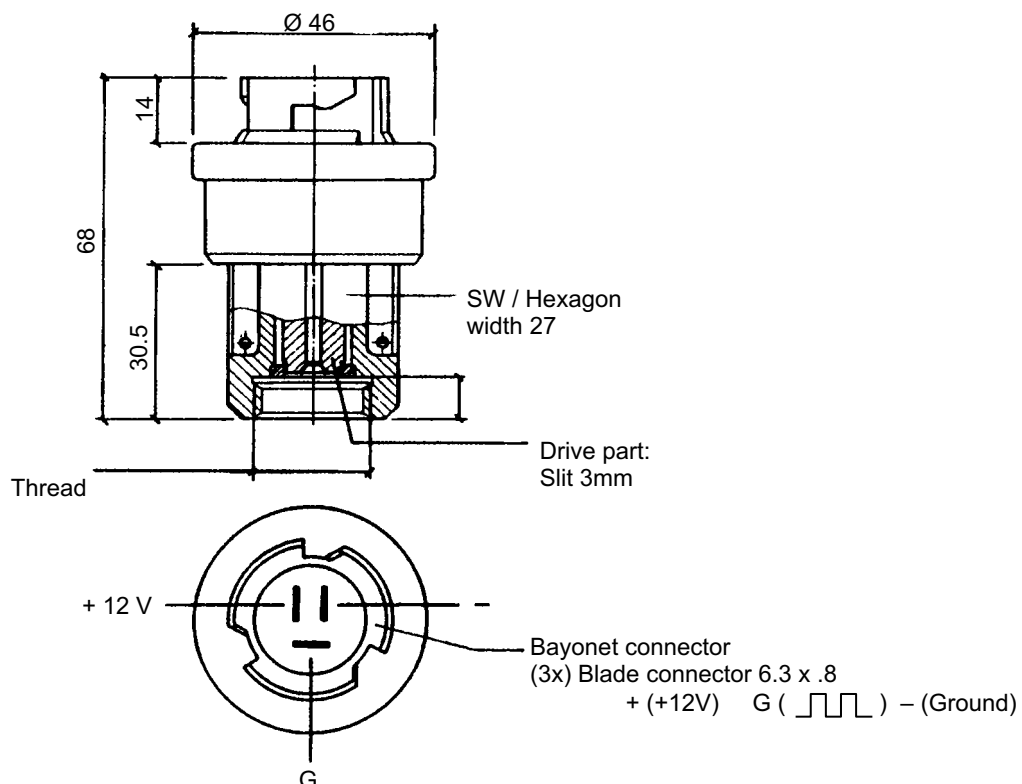
Voltage: 8V-16V

Current: 21mA

Operating Temperature: -40°C to +100°C

Part no.	Pulses	Thread
340-214-002-001B	8	M22x1.5

Dimensions (mm):



FUEL GAUGES - Hall Effect

PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS/SPEEDOMETERS 3 BLADE

For instruments which require an electrical pulse (**single** pulse) for inquiry of the speed and/or the distance.

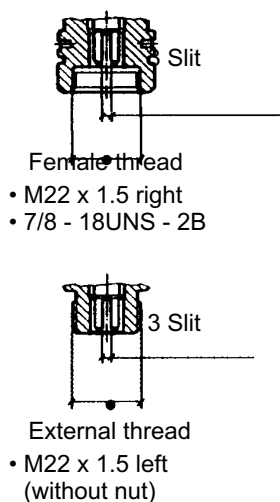
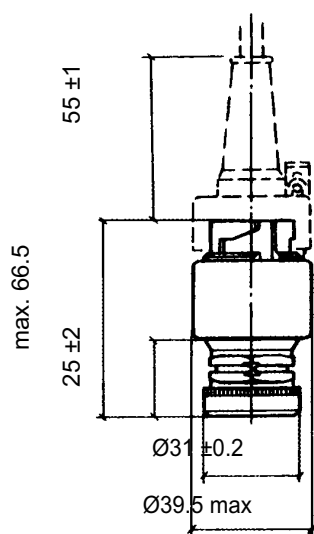
Output: single pulse • Pulses/Revolution: 8 (s- and V-pulse)

Pulse Ratio: 30-70%...70-30% • Operating Voltage: 6.5V...16V

Part no.	Pulses	Thread
2155-01000000	8	M22x1.5 right (female)
2155-02000000	8	M22x1.5 left (external) no nut
A731012	8	7/8" - 18UNF Male/Female in line

A-SPEC-731 Sender cable connector bayonet plug kit, 3 way spade

Thread variants:



- Blue - Speed Signal
- Green - Negative
- Red - Positive
- 12/4V
- Square wave signal
- Cable Length 4M+



(A1)



3x Blade connector 6,3 x 0,8

A731012



PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS 4 BLADE

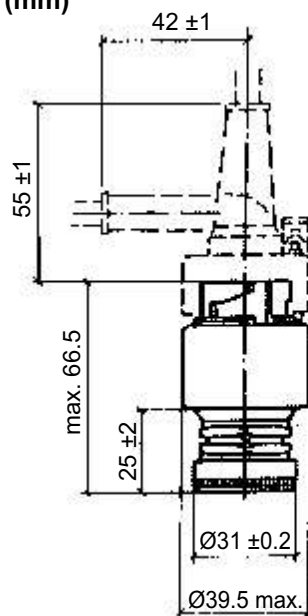
For instruments which require an electrical pulse (**dual pulse inverse**) for inquiry of the speed and/or the distance.

Output: dual pulse inverse

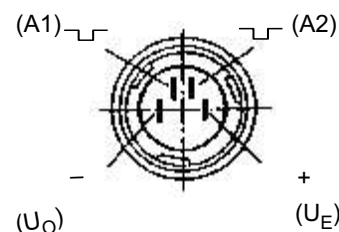
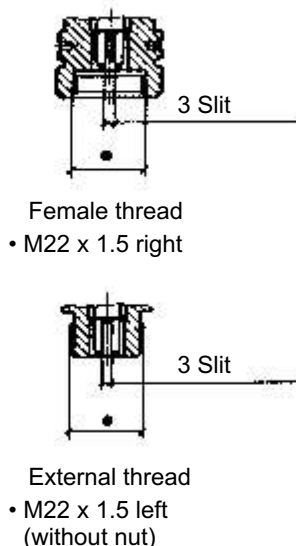
Part no.	Pulses	Thread
2159-01000000	8	M22x1.5 right (female)
2159-02000000	8	M22x1.5 left (external) no nut

A-SPEC-731 Sender cable connector bayonet plug kit, 4 way spade

(mm)



Thread variants:



4x Blade connector 3 x 0,8

SENSORS - Hall Effect

PULSE SENSORS FOR ELECTRONIC TACHOGRAPHS/SPEEDOMETERS

For instruments which require and electrical pulse (single pulse) for inquiry of the speed and/or the distance.

For applications requiring an additional mechanical take-off.

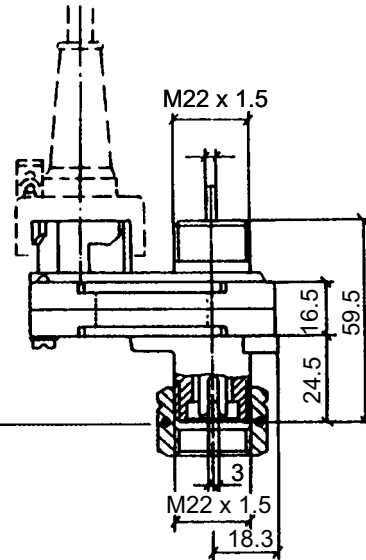
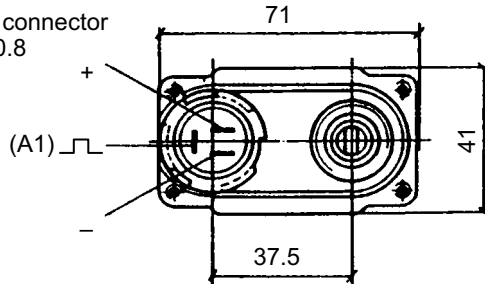
Output single pulse • Pulses/Revolution: 8 (s- and V-pulse)

Pulse Ratio: 30-70%...70-30% • Operating Voltage: 6.5V...16V

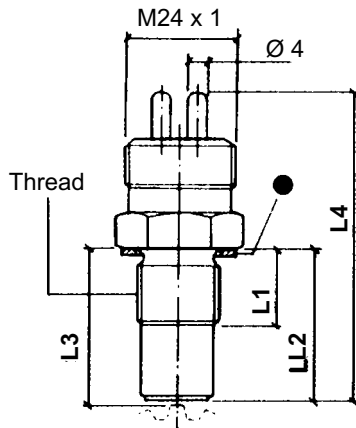
Part no.	Pulses	Thread (Input & Output)
2157-03000000	8	M22x1.5

(mm)

Blade connector
6.3 x 0.8



Tightening torque:
50 ± 10Nm



SENDERS - Inductive Push On

Electrical connection: 2-pole, insulated return

Rated voltage: Independent

Interior Resistance: Ri 1050Ω ± 100Ω

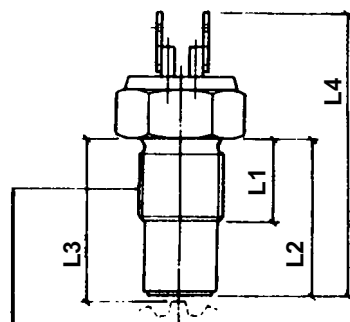
Test Voltage: 500V

Insulating Resistance: 500kΩ min.

Part no.	Signal	Thread	L1	L2	L3	L4
340-804-005-002C	Sine	M18x1.5	24.9	26.5	27.65	63
340-804-005-007C	Sine	M18x1.5	15	35	36	71



connector 6,3 x 0,8mm



SENDERS - Inductive Blade

Electrical connection: 2-pole, insulated return

Rated voltage: Independent

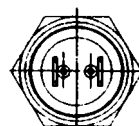
Interior Resistance: Ri 1050Ω ± 100Ω

Test Voltage: 500V

Insulating Resistance: 500kΩ min.

Part no.	Signal	Thread	L1	L2	L3	L4
340-804-006-007C	Sine	M18x1.5	24.9	26.5	27.65	63

Thread



Tachourmeter - Tachometers

TACHOURMETERS - Electronic with LCD Hourmeter

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to 1,2,3,4,5,6,8 or 12cyl./4 stroke, 1,2,3 or 4 cyl./2-stroke ignition and alternator pick-up ("W"terminal). Also suitable for signal from generator or inductive sender unit. Incorporated hourmeter shows true engine hours. Operating hours 99,999.9. Pulse range 0.5-200 pulses per rev. Illumination 12V included.

For 24V application use globe 999-065-002 (2 required).

For matching speed sensors/senders see page 9-10

TACHOURMETER

Part no.	Range	Ø	Voltage
333-035-010G	3000rpm	80mm	12/24V
333-035-011G	4000rpm	80mm	12/24V
333-035-014C	6000rpm	80mm	12/24V
333-055-002G	3000rpm	100mm	12/24V

Note: 8 pin plug required which is not included in kit, PN. **Z2863103**
Terminal PN. **Z2863016** x 8



TACHOMETERS - Electronic

Suitable for most petrol and diesel engines. Field programmable to suit 4, 6, or 8 cyl./4 stroke ignition and alternator pick-up (Terminal "W"). For 24V application use globe 999-065-002 (2 required)

TACHOMETER

Part no.	Range	Ø	Voltage
333-035-017G	6000rpm	52mm	12V
333-035-018G	8000rpm	52mm	12V
333-035-001G	3000rpm	80mm	12V
333-035-002C	4000rpm	80mm	12V
333-035-003C	7000rpm	80mm	12V
333-035-022C	10000rpm	80mm	12V
333-055-001G	3000rpm	100mm	12V
333-045-001G	3000rpm	80mm	24V
333-045-002C	4000rpm	80mm	24V

Note: 8 pin plug required which is not included in kit, PN. **Z2863103**
Terminal PN. **Z2863016** x 8



GENERATOR SENDER

Part no.	Signal Output	Thread
340-807-001-001C	With Distance Pulse Output	M22x1.5
340-808-001-002G	Output 1.0 Volt AC current per 100rpm	M22x1.5



TEMPERATURE GAUGES - Electric

Suitable for most vehicles and machines.

Illumination 12 or 24V included.

For other sender units please refer to page 15

TEMPERATURE GAUGES - WATER

Part no.	Range	Ø	Voltage
310-030-002C	40-120°C	52mm	12
310-040-002C	40-120°C	52mm	24

With ISO symbol.

40-120°C = 100-250°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-005-001D	40-120°C	1/8-27NPTF	Button

SENDER/SWITCH COMBINATION

Part no.	Range	Thread	Switch Point
323-803-001-011D	40-120°C	5/8-18UNF	95°C
323-803-001-016D	40-120°C	M14x1.5	94°C
323-803-001-001D	40-120°C	M14x1.5	100°C

40-120°C = 100-250°F

For other sender units please refer to page 16

TEMPERATURE GAUGES - ENGINE OIL

Part no.	Range	Ø	Voltage
310-030-003C	50-150°C	52mm	12
310-040-003C	50-150°C	52mm	24

With ISO symbol.

50-150°C = 120-350°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-009-001D	50-150°C	1/8-27NPTF	Button

SENDER/SWITCH COMBINATION

Part no.	Range	Thread	Switch Point
323-803-002-002D	50-150°C	M14x1.5	120°C
323-803-002-007D	50-150°C	M14x1.5	120°C
323-803-014-002D	50-150°C	M14x1.5	130°C

TEMPERATURE GAUGES - TRANSMISSION OIL (CYLINDER HEAD -AIR COOLED ENGINE)

Part no.	Range	Ø	Voltage
310-030-004C	60-200°C	52mm	12
310-040-004C	60-200°C	52mm	24

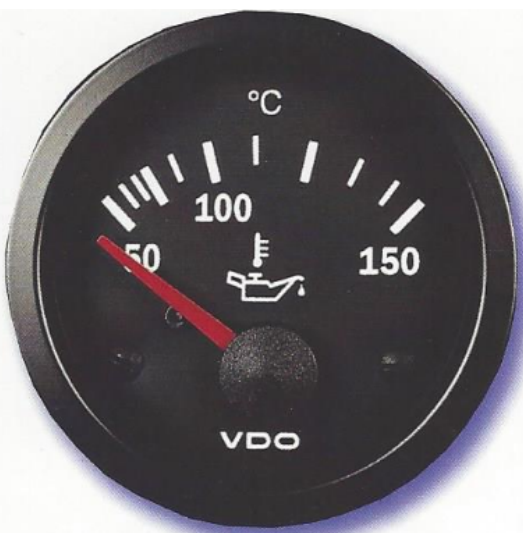
With ISO symbol.

60-200°C = 140-392°F



SENDER ONLY

Part no.	Range	Thread	Terminal
323-801-003-001D	60-200°C	M10x1.5	Button
323-801-028-001C	60-200°C	M14x1.5	Screw



Temperature - Gauges

TEMPERATURE GAUGES - Mechanical

Suitable for most vehicles and machines. Process connection is 1/8" - 27NPTF threaded removable thermowell.

Temperature is transmitted via capillary tube.

Coil up excess capillary tubing - **do not cut to shorten!**

Illumination globe holder not included.

For 24V application use globe **999-065-002**

For 12V application use globe **999-065-001**

Globe Holder part no. **999-067-001**

TEMPERATURE GAUGE (WATER GAUGE)

Part no.	Range	Ø	CapillaryLength
180-035-002G	40-120°C	52mm	1600mm
180-035-004G	40-120°C	52mm	2600mm
180-035-005G	40-120°C	52mm	4000mm
180-035-006G	40-120°C	52mm	6000mm
180-035-008G (oil)	50-150°C	52mm	2600mm

ACCESSORIES

Part no.	Description	Thread
1-801-078	Block Adapter	1/8x27NPTF

Note: Suitable for all the above temperature gauges

TEMPERATURE EXHAUST/PYROMETER - Electric

Suitable for most exhaust systems.

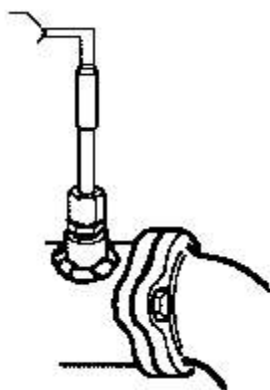
Thermocouple connection is by 1/4" - 18NPTF compression fitting.

Illumination 12V Included.

PYROMETER ELECTRONIC KIT

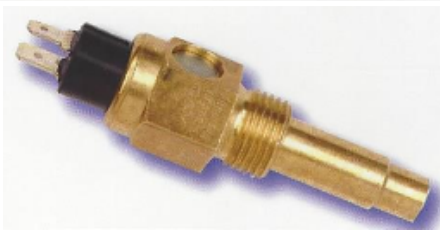
Part no.	Range	Ø	Voltage
397-015-003	0-900°C (37.6mV@900°C)	52mm	12

Complete Kit - consisting of instrument and thermocouple, 5M loom and weld boss



Thermocouple should be fitted 100mm after Turbo.





SENDERS -To Suit VDO Instruments 40° - 120°C

The senders listed hereunder are for use with all instruments listed in this publication.
Selection is simple: just match the range of the instrument with the range of the sender unit.

WATER TEMPERATURE SENDERS

To suit all VDO temperature gauges with range 40° - 120°C

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-801-005-001D	40-120°C	1/8-27NPTF	(A)
323-801-001-016D	40-120°C	1/2-14NPTF	(B)
323-801-001-026N	40-120°C	M14x1.5	(B)

40-120°C = 100-250°F

WATER TEMPERATURE SENDERS WITH SWITCH

Contact Rating 3 Watt

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Switching capacity: 1.2W to 3W non-inductive

Break Point: 5°C max. below make point

Contacting Mode: slow-acting

Type of contact: Switch closes at switch point

Part no.	Range	Switch Point	Thread	Type
323-803-001-004D	40-120°C	90°C, NO	M14x1.5	(D)
323-803-001-008D	40-120°C	110°C, NO	M14x1.5	(D)
323-803-001-016D	40-120°C	94°C, NO	M14x1.5	(D)
323-803-004-002D	40-120°C	105°C, NO	M14x1.5	(E)
323-803-001-011D	40-120°C	95°C, NO	5/8-18UNF	(D)
323-803-001-001D	40-120°C	100°C, NO	M14x1.5	(D)

40-120°C = 100-250°F

Note: NO = Normally open - contact closes at switch point

TEMPERATURE SENDER UNIT

Insulated Return - Single Station

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-805-001-001K	40-120°C	M14x1.5	(C)
323-805-001-002	40-120°C	5/8-18UNF	(C)

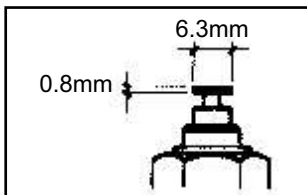
TEMPERATURE SENDER UNIT

Insulated Return - Dual Station

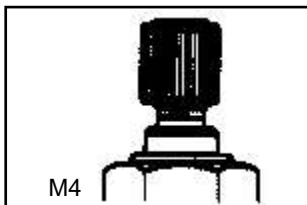
Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

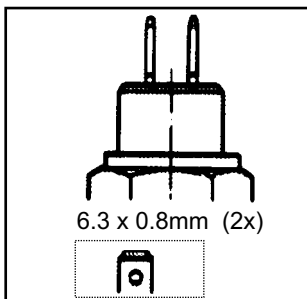
Part no.	Range	Thread	Type
323-805-003-001	40-120°C	1/4-18NPTF	(C)



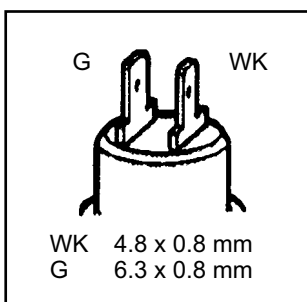
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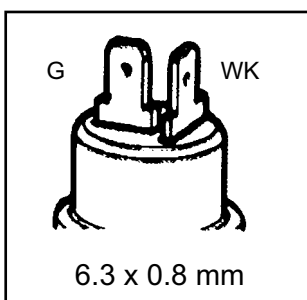
(B)



(C)



(D)



(E)

Temperature Senders

SENDERS - To Suit VDO Instruments 50°-150°C

The senders listed hereunder are for use with all instruments listed in this publication.

Selection is simple: just match the range of the instrument with the range of the sender unit.

OIL TEMPERATURE SENDERS ONLY

To suit all VDO temperature gauges with range 50° - 150°C

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-801-009-001D	50-150°C	1/8-27NPTF	(A)
323-801-010-003D	50-150°C	M12x1.5	(A)
323-801-004-002N	50-150°C	M14x1.5	(F)

50-150°C = 120-300°F

SENDER/SWITCH COMBINATION

Related Voltage: 6V to 24V

Temperature response time: 3 minutes minimum after switching on operating current.

Switching capacity: 1.2W to 3W non-inductive

Break Point: 5°C max. below make point

Contacting Mode: slow-acting

Type of contact: Switch closes at switch point

Part no.	Range	Switch Point	Thread	Type
323-803-014-002D	50-150°C	130°C, NO	M14x1.5	(D)
323-803-002-007D	50-150°C	130°C, NO	M14x1.5	(D)

50-150°C = 120-300°F

Note: NO = Normally open - contact closes at switch point

TEMPERATURE SENDER UNIT

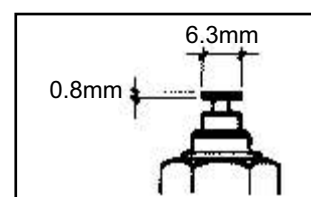
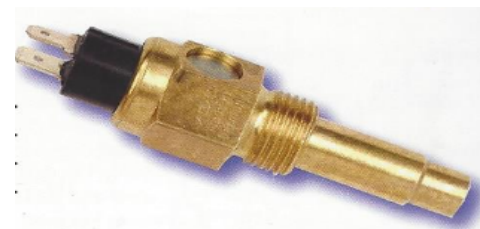
Insulated Return

Related Voltage: 6V to 24V

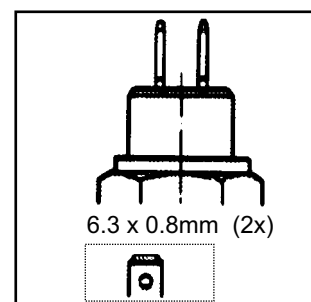
Temperature response time: 3 minutes minimum after switching on operating current.

Part no.	Range	Thread	Type
323-805-003-001N	50-150°C	M14x1.5	(C)

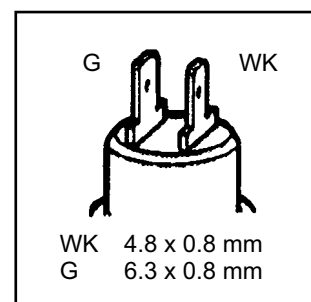
50-150°C = 120-300°F



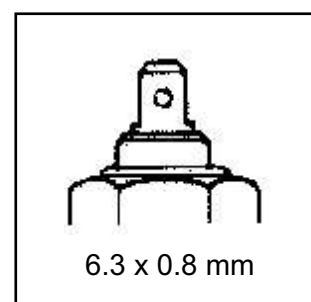
(A)



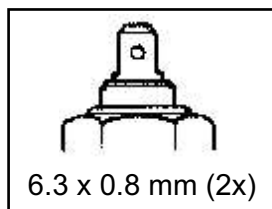
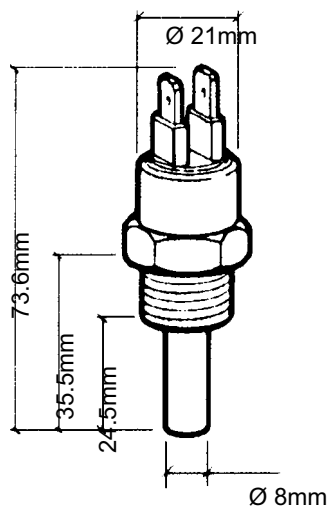
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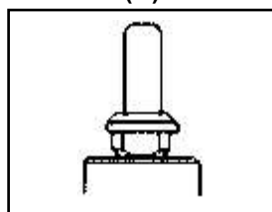
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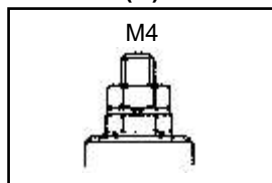
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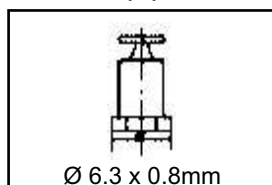
(A)



(B)



(B)



(D)

TEMPERATURE SWITCHES - Insulated Return

Rated Voltage: 6V to 12V.

Switching Capacity: 100W/120W.

Make Point: Contact close as temperature rises.

Break Point: Contact open as temperature falls.

2-fold blade x 0.8DIN 46244

Part no.	On	Off	OP. Max	Thread
X10-232-001-001 ⁺	64°C	60°C	110°C	M14x1.5
X10-232-001-002 [*]	82°C	74°C	110°C	M14x1.5
X10-232-001-007 [*]	96°C	92°C	110°C	M14x1.5
X10-232-001-010 [*]	105°C	100°C	110°C	M18x1.5

⁺ = Switching capacity 120W

^{*} = Switching capacity 100W

TEMPERATURE SWITCHES - Common Ground

Rated Voltage: 6V to 12V.

Switching Capacity: 1.2W to 3W non-inductive

Type of contact: **Contact closes at switch point.**

Contact mode: slow-acting

Break Point 5°C max. below make point.

Part no.	Switching Point	OP.max	Thread	Type
232-011-005-003D	90°C	120°C	M10x1.5	(C)
232-011-005-004D	170°C	220°C	M10x1.5	(C)
232-011-005-011D	125°C	155°C	M10x1.5	(C)
232-011-005-017D	150°C	200°C	M10x1.5	(C)
232-011-005-019D	96°C	120°C	1/8-27NPTF	(C)
232-011-005-020D	105°C	120°C	1/8-27NPTF	(C)
232-011-005-030D	185°C	230°C	M10x1.5	(D)
232-011-017-010D	110°C	160°C	M14x1.5	(A)
232-011-017-017D	85°C	120°C	M14x1.5	(A)
232-011-017-032D	120°C	130°C	M14x1.5	(A)
232-011-017-034D	100°C	160°C	M14x1.5	(A)
232-011-017-038D	55°C	120°C	M14x1.5	(A)
232-011-017-040D	70°C	120°C	M14x1.5	(A)
232-011-017-135D	102°C	150°C	M14x1.5	(B)
232-011-019-003D	195°C	250°C	M10x1.5	(C)

Rated Voltage: 6V to 12V.

Switching Capacity: 3W non-inductive

Type of contact: **Contact open at switch point.**

Contracting mode: slow-acting

Break Point: 5° max. below make point.

Part no.	Switching Point	OP.max	Thread	Type
232-011-020-026D	103°C	120°C	M14x1.5	(B)

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- 140mm diameter





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